

Algebra 2 5.0

Name: _____ Period: _____

Algebra I Comprehensive Review

STUDY PACKET

CENTER 1: VOCABULARY REVIEW

Write the definition of each term:

Evaluate: _____

Equation: _____

Expression: _____

Linear Equation: _____

Slope Formula: _____

Y-intercept: _____

X-intercept: _____

slope intercept form: _____

Order of Operations: _____

Variable: _____

Horizontal Line: _____

Vertical Line: _____

Coordinate plane: _____

X-axis: _____

Y-axis: _____

Parallel Lines: _____

Perpendicular Lines: _____

Proportion: _____

Positive Correlation: _____

Negative Correlation: _____

Inequality: _____

Greater than: _____

Less than: _____

Absolute value: _____

CENTER 2: FRACTIONS

RULES FOR OPERATIONS WITH FRACTIONS:

When **ADDING** two fractions, you first must find a

_____.

Then add across the _____ but not across the _____.

When **SUBTRACTING** two fractions, you first must find a

_____.

Then subtract across the _____ but not across the _____.

When **MULTIPLYING** two fractions, multiply across the _____ and
across the _____.

When **DIVIDING** two fractions, _____ the second fraction and then
_____ across the top and bottom.

**** REMEMBER TO REDUCE ALL FRACTIONS TO LOWEST TERMS! ****

Perform the indicated operation.

1. $\frac{3}{4} + \frac{1}{6}$

2. $\frac{2}{5} + \frac{2}{3}$

3. $\frac{5}{6} + \frac{4}{9}$

4. $\frac{3}{7} - \frac{1}{6}$

5. $\frac{1}{2} - \frac{7}{8}$

6. $\frac{5}{10} - \frac{1}{4}$

7. $\frac{3}{7} \bullet \frac{21}{12}$

8. $\frac{5}{8} \bullet \frac{32}{45}$

9. $\frac{4}{11} \bullet \frac{44}{14}$

•
10. $\frac{4}{7} \div \frac{20}{14}$

11. $\frac{5}{3} \div \frac{30}{24}$

12. $\frac{14}{3} \div \frac{8}{15}$

CENTER 3: ORDER OF OPERATIONS

P

E

M

D

A

S

Simplify each expression completely. All work must be shown to receive full credit.

1) $\frac{15-6}{3} =$

2) $48 \div 8 \square 6 - 10 =$

3) $30 - 10 \square 2 + 5 =$

4) $28 + 4^2 \div 2 \square 4 =$

5) $12 - 4[1 + (10 - 7)]^2 =$

6) $\frac{36 \div 3^2 \square 2}{(9 - 7)^3} =$

7) $1 - 3\{5 - 2(3 + 1)\} =$

8) $1 + 2(3^2 - 5)^2 \div 8 =$

CENTER 4: LAWS OF EXPONENTS

When **MULTIPLYING** bases, you _____ the exponents.

When **DIVIDING** bases, you _____ the exponents.

When **RAISING** a base to a **POWER**, you _____ the exponents.

When you have a **NEGATIVE** exponent, you write it as the _____.

Anything raised to the **ZERO** power is _____.

Simplify each expression completely using the rules of exponents. Show all work for problems that require more than one step.

1) $5x^2 \cdot 3x =$

2) $(7a^4b^5)(-2a^3b^4) =$

3) $(2m^3)^4 + (m^2)^6 =$

4) $(4m^4n^2)^3 =$

5) $\frac{-8x^3y}{12xy^5} =$

6) $(x^3)^4 + (x^6)^2 =$

$$7) (3)^{-2} =$$

$$8) \left(\frac{3^2}{3^{-3}} \right)^2 =$$

$$9) \left(\frac{2}{3} \right)^{-4} =$$

$$10) -3^2 + (x)^0 =$$

$$11) -3x^0 - (5x)^0 =$$

$$12) (m^{-4}m^3)^2 =$$

$$13) \frac{27a^2b^{-4}c^6}{-9ab^3c^{-2}} =$$

$$14) (3a^3b^2)^2 (-2ab^2)^3 =$$

$$15) \frac{(4x^2y^5z^4)^3}{(2x^2yz^3)^4} =$$

CENTER 5: SOLVING LINEAR EQUATIONS

Write a set of general rules to solve all linear equations:

Solve the following equations:

1) $3x - 4 = 5$

2) $\frac{2}{3}y - 8 = 0$

3) $5x + 10(4x + 3) = 15$

4) $5x - 15 = 4x + 3$

5) $2(x - 3) = x + 3$

6) $3(y - 1) = -(y - 5)$

7) $2r - 1 = r - 5 + 3r$

8) $2a - (1 - a) = 11 - a$

9) $2(2x + 2) + x = 3x - 4$

10) $3(5y - 1) + 5(3y + 2) = 7$

Write in complete sentences the steps you took to solve problem #10.

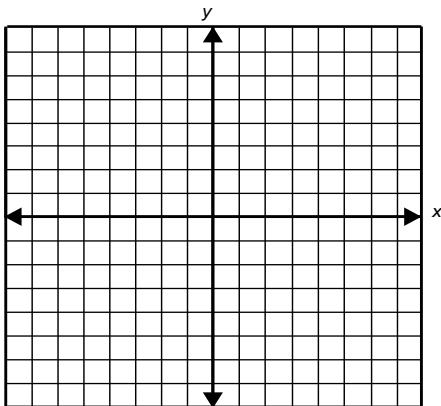
CENTER 6: GRAPHING LINES AND FINDING EQUATIONS OF LINES

In order to graph a line or find the equation of a line,
you need the _____ and _____.

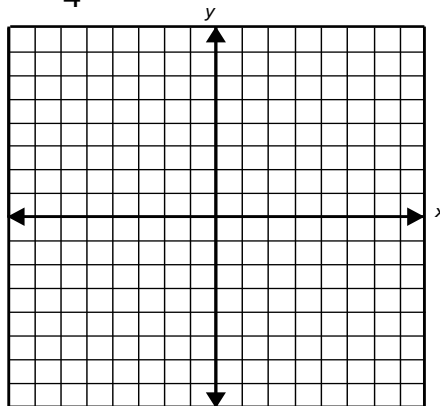
The form used to graph a line is _____.

Graph each of the following:

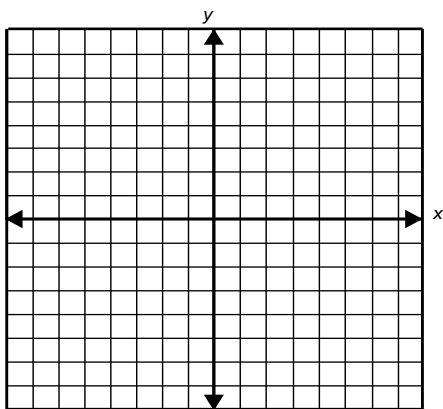
1) $y = -2x + 5$



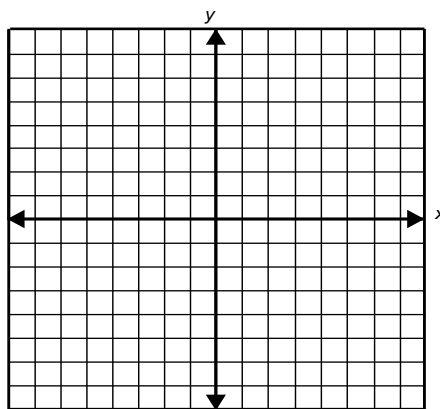
2) $y = \frac{3}{4}x - 6$



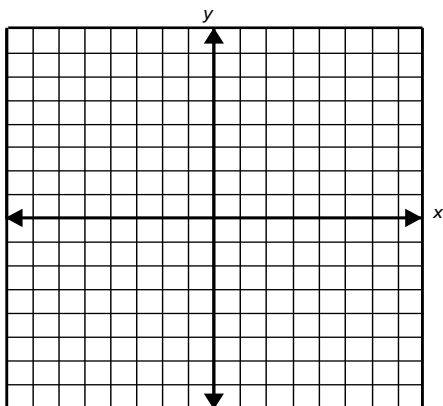
3) $y = -3$



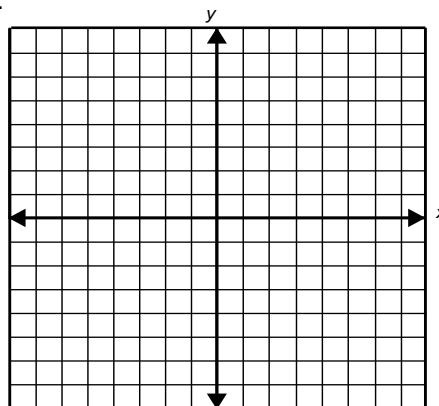
4) $x = 4$



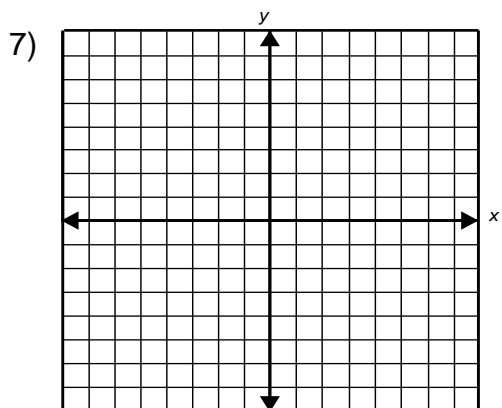
5) $2x - 3y = 9$



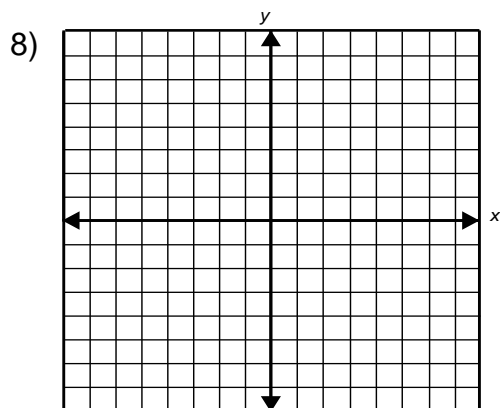
6) $\frac{1}{2}x - y = -4$



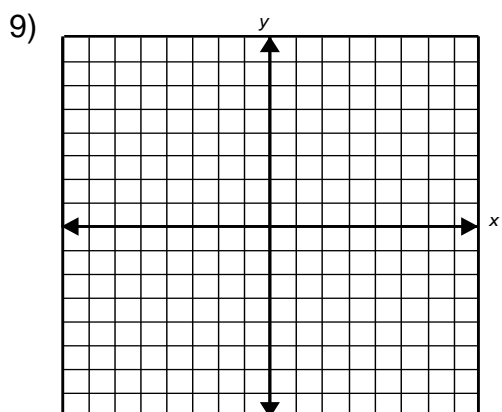
Find the equation of each line graphed:



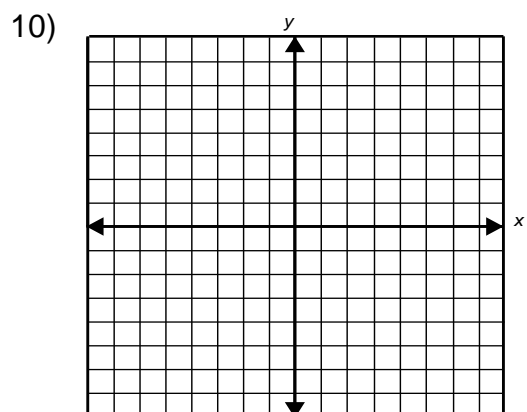
EQ: _____



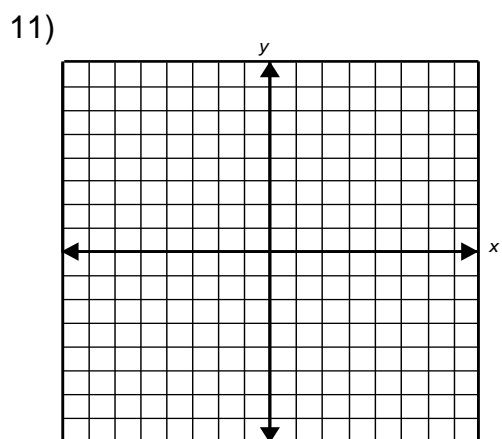
EQ: _____



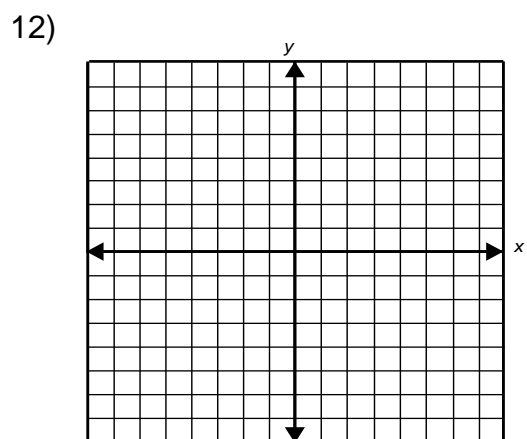
EQ: _____



EQ: _____



EQ: _____



EQ: _____